CLEAN VERSION OF REPLACEMENT PARAGRAPHS IN THE SPECIFICATION PURSUANT TO 37 C.F.R. § 1.21 (b)(1)(ii)

In the Specification, please replace page 9, first paragraph, lines 1-3 with the following paragraph:

Figure 3 schematically shows the vector maps, including restriction endonuclease recognition sites, of the protein expression vectors pQE-30, pQE-31 and pQE-32. The nucleotide sequence for the polylinker region of pQE-30 is provided in SEQ ID NO: 22. The nucleotide sequence for the polylinker region of pQE-31 is provided in SEQ ID NO: 23. The nucleotide sequence for the polylinker region of pQE-32 is provided in SEQ ID NO: 24.

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Also, please replace the paragraph on page 56, lines 5-30, and page 57, lines 1-2, with the following paragraph:

To confirm that the *sqdX* gene in the cyanobacteria *Synechococcus* encodes functionally homologous proteins, the *sqdX* open reading frame of *Synechococcus* was inserted behind the *tac* promoter in the mobilizable broad host range plasmid pRL59EH (Black *et al.*, "Analysis of a Het- mutation in Anabaena sp. PCC7120 implicates a secondary metabolite in the regulation of heterocyst spacing," *J. Bacteriol.*, 174: 2282-2292 (1994)), and transferred the constructs by conjugation into *Synechococcus* mutant 7942ΔsqdX as described in Wolk *et al.*, "Construction of shuttle vectors capable of conjugative transfer from *Escherichia coli* to nitrogen-fixing filamentous cyanobacteria," *Proc. Natl. Acad. Sci. USA*, 81: 1561-565 (1984). Sequences 5' of the presumed ATG up to the first in-frame stop codon (position 2385912-2387168 of the genome sequence) were included. The *sqdX* gene of *Synechococcus* was PCR-cloned from the plasmid pSYB using the primers 5'-AAG GAT CCT GCG CTA AAG TCG CAC TC-3' (SEQ ID NO: 21) and 5'-ATA AGC TTC GAG CTC AGG CCG CT-3' (SEQ ID NO: 13) into the *Hin*d III/*Bam*H I sites of pRL59EH. An Ω cassette from the plasmid pHP45Ω (as described in Prentki, P. and Krisch, H.M., "In vitro insertional mutagenesis with a selectable DNA fragment," *Gene*, 29: 303-313 (1984)) conferring spectinomycin and streptomycin resistance was inserted into the *Hin*d III sites of

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these plasmids to provide a suitable selectable marker. The resulting plasmid containing *sqdX* of *Synechococcus* was designated pSQDX7942. Exconjugants were selected on BG11 medium containing 25 μg/ml kanamycin, 10 μg/ml spectinomycin, and 1 μg/ml streptomycin and were analyzed by DNA/DNA hybridization to confirm the presence of the proper plasmid construct. The insertion of the *sqdX* construct restored the sulfolipid biosynthetic activity in the *Synechococcus* mutant 7942ΔsqdX as shown by TLC lipid analysis. Based on the observed genetic complementation, it is concluded that the cyanobacterial *sqdX* gene encodes a protein involved in sulfolipid biosynthesis.

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REMARKS

Applicants hereby affirm the provisional election (made during a telephone conversation with the Examiner on April 20, 2001) made with traverse[1] to prosecute the invention claimed in Group I. Claims 6-12 were withdrawn from further consideration by the Examiner as being drawn to a non-elected invention and are now cancelled (without prejudice to their prosecution in the future). Claims 1-14 are pending. Claims 1-14 were rejected by the Examiner for the reasons noted below. The Examiner provides a number of rejections and we list them here in the order in which they are addressed:

1. Claims 1-5 were rejected under 35 U.S.C. § 112, first paragraph as allegedly a) containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, and b) failing to enable any person skilled in the art to make and use the invention commensurate with the scope of the claims.

2. Claims 1-2, 5, 13 and 14 were rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Essigmann *et al.*, "Prediction of the Active-Site Structure and NAD^+ Binding in SQD1, a Protein Essential for Sulfolipid Biosynthesis in *Arabidopsis*," *Arch. Biochem. & Biophys.*, 369: 30-41 (1999).

[1] Applicants traverse the rejection because the Examiner has not shown that there is an additional search burden as required by MPEP § 808.02.